Status of the Claims

Claims 1-17 are pending in the present application. Claims 8, 9, 10, 13, 14, and 15 have been amended to more clearly define the invention.

Telephone Conference with the Examiner

On January 30, 2003, applicants' attorney, conducted a telephone interview with the Examiner and his Supervisory Examiner in which the cited art was discussed. In particular, applicants' attorney requested that the Examiner identify with specificity those elements disclosed in the cited art that the Examiner felt were equivalent to elements recited in applicants' claims, in order to facilitate the preparation of an appropriate response to the rejection of applicants' claims. The Examiner's position is that the advertising content disclosed by Brown is equivalent to the recited items in applicants' claims, and that the priority queues disclosed by Brown are equivalent to the item slot groups recited by applicants. The Examiner further indicated that he believes queues inherently define a finite number of empty slots, in that from a programming standpoint, when a queue is constructed, a predefined amount of memory resources must be allocated to the queue, so that the number of slots in a queue will generally be predetermined. Applicants' attorney wishes to thank the Examiner and his Supervisor for explaining the Examiner's position in greater detail.

Finality of the Action

Applicants respectfully request that the Examiner reconsider the finality of the action. As will be discussed more fully below, until the telephone interview noted above, applicants did not have a full understanding of the Examiner's position, and without such understanding, applicants ability to prepare persuasive arguments or distinguishing amendments was adversely impacted.

The Examiner's rejections have essentially been in the format of "this portion of the prior art" discloses this "recited element." Generally, the Examiner has referenced one or more paragraphs in the prior art reference that is cited as disclosing a subparagraph in applicants claims. While such a reference can sometimes be easily understood, in the present context, even after careful review of the Office Action and the portion of the cited reference indicated by the Examiner, it was not clear what elements disclosed in the cited art were being considered by the Examiner as equivalent to elements recited by applicants' claims. The telephone interview has made this issue clear to applicants' attorney, but only after a Final Office Action has issued in the present case.

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Now that such issues have been clarified as a result of the telephone interview, applicants respectfully request that the Examiner withdraw the finality of the present Office Action, to allow applicants an opportunity to present arguments and distinguishing amendments based on the clarification of the Examiner's position that was provided by the telephone interview. Requiring applicants to file a request for continued examination before applicants have been provided clarification of the rejections made by the Examiner appears to be inequitable.

Claims Rejected under 35 U.S.C. § 102

The Examiner has rejected Claims 8 and 13 under 35 U.S.C. § 102(e) as being anticipated as by Brown (U.S. Patent No. 6,026,368). The Examiner indicates that Brown discloses a method for providing content and advertising to a targeted set of viewers, and that content locations and site hosts can be targeted for content. The Examiner further indicates that Brown discloses the sub item slot groups of Claim 13, as well as each other element of applicants' invention as defined in Claims 8 and 13. The telephone interview made it clear that the Examiner believes the advertising content disclosed by Brown is equivalent to applicants' recited items in these claims, and that the priority queues disclosed by Brown are equivalent to applicants slot item groups. The telephone interview further clarified the Examiner's belief that because creation of a queue programmatically requires the allocation of memory resources based on a predefined queue size, a queue inherently includes a plurality of empty slots into which items can be placed. The Examiner thus concludes that Brown anticipates the claimed invention. Applicants respectfully disagree for the following reasons.

Despite the Examiner's identification of the priority queues disclosed by Brown as being equivalent to the recited item slot groups, it appears that present invention defines a method for filling the empty slots in item slots groups in a distinguishable manner. These differences become apparent when the recited item slot groups, meta item slot groups, and item slots are compared to the priority queues disclosed by Brown, and more importantly, when the process of filling item slots within priority queues disclosed by Brown is compared with the method for filling item slots in item slot groups and meta item slot groups recited by applicants' claims.

The present invention is directed a method of distributing (or filling) items into available slots, by organizing the slots into different types of organizational structures. A first such organizational structure is referred to as an item slot group, while a second such organizational structure is referred to as a meta item slot group. Meta item slot groups are related to item slot groups

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in that each meta item slot group encompasses at least one item slot group. The number of item slots in each meta item slot groups must be the same as the cumulative number of item slots in each item slot group encompassed by the meta item slot group.

Claim 8 defines a specific process for filling the item slots of the meta item slot groups and the item slots of the item slot groups. It is important to understand that the item slots in a meta item slot group are related to, yet not identical to, the items slots in each item slot group encompassed by that meta item slot group. For example, assume that a meta item slot group A encompasses both item slot group A1 and item slot group A2. Further assume that item slot group A1 includes 10 item slots; and item slot group A2 includes 15 item slots. Meta item slot group A must then include 25 item slots. The process of allocating an item to any one of the 25 item slots in meta item slot group A does not similarly allocate that item to *any specific one* of the item slots of item slot group A1 or item slot group A2. The item slots in a meta item slot group do not correspond to a specific item slot group encompassed by that meta item slot group, even though the item slots in the meta item slot group are equivalent in number to the cumulative total of item slots in the item slot groups encompassed by the meta item slot group. This point is clearly described in the specification (see pages 16-21, describing the Second Operative Example). To further clarify this distinction in the claims, the term *meta item slot* has been employed to correspond to item slots in meta item slot groups (which must be the same in number as the cumulative total as the item slots in each item slot group encompassed by the meta item slot group).

As defined in Claim 8, the item slots and meta item slots are filled as follows. Items of a first type are allocated to empty *meta item slots* in meta item slot groups. The items of the first type are not yet allocated to any specific item slot group. Next, items of a second type are distributed to specific item slot groups. Then, the items of the first type are allocated to specific item slot groups. As described in the specification, this process ensures that for a given meta item slot group, item slots in the item slot groups encompassed by the meta item slot group that can only accommodate items of the second type are not filled with items of the first type until all of the items of the second type are allocated. As is further clearly described in the specification, simply randomly allocating items of the first type into item slots in item slot groups could result in a less efficient utilization of open item slots.

As applicants understand Brown's system, data related to content (i.e., ads), subscribers (individuals in the network who "request" content) and locations (places where ad content can be

displayed) is collected. Rules are prepared, and those rules control what content is displayed at any given location. Those rules select ads to display based on time, location, and subscriber information, according to parameters controlled by the system (input by an analyst). Generally, the analyst will prepare a plurality of priority queues, each of which include a plurality of different content segments (i.e. ads). A priority queue might thus identify five different content segments. A plurality of priority queues are stored in a relational database referred to as the on-line queue manager. When a subscriber logs onto the network, a "request" for content is forwarded to the system, and the on-line queue manager provides a play list of content, by manipulating the priority queues. The priority queues in Brown can be related to a specific subscriber or a group of subscribers, as indicated by the following.

> Once the data are loaded, the profiles are established, and the rules are developed, the queue generator 140 within the queue builder 10 creates priority queues of content segments for each identified subscriber, content location and time period definition. These queues are passed from the queue builder 10 to the on-line queue manager 20 over a dedicated network connection. The on-line queue manager 20 places the queues in a relational data base. Through a set of standard function calls that are imbedded in the applications of the communications service, these applications send requests for content segment play lists to the on-line queue manager 20. The requests identify the current subscriber, the content location of the request, the date and time of the request, and the type of content record (e.g. advertisement, movie, still picture, etc). The on-line queue manager 20 returns a play list of content segments that are targeted to the subscriber, location, and time period identified in the request. In addition, the on-line queue manager 20 records the response to the request as an exposure of the content segment(s) included in the play list. (See column 3, line 63 to column 4, line 15 of Brown.)

The Examiner has indicated his belief that priority queues are equivalent to the applicants' recited item slot groups. One that basis, to determine if Brown truly anticipates applicants' claimed invention, it is important to consider Brown's disclosure of how items are placed into the priority queues, to determine if the approach used is equivalent to that defined by applicants' claims. The section of Brown describing the generation of priority queues is reproduced below:

> The queue generator 140 creates the prioritized segment queues (priority queues 142) that are exported to the on-line queue manager 20. Queues are created for each of the target entity types (i.e. Subscribers, Content Locations, and Time Periods) based on the rules stored in the relational data base.

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Queues are created in the following manner. The queue generator 140 selects all currently valid rules by selecting all rule records that have a valid start date prior to the current date, and a valid end date later than the current date. These records are stored temporarily in a processing stack that is read by the queue generator 140. If the stack is empty the queue generator 140 prints a queue generator 140 summary report indicating that no valid rules were found. If the stack has rules in it, then the queue generator 140 processes each rule. For each rule in the stack, the queue generator 140 evaluates the target object type. The target object types include folders, profiles and individual entities.

The queue generator 140 creates a list of the individual target entities identified in the rule. In the case where a rule contains a target object that is a folder, the queue generator 140 searches the relational data base for all profiles and individual records identified as contents of the folder. For each profile the queue generator 140 searches the relational data base for all individuals that match the profile selection criteria. The generator maintains a current rule target list which holds the record ids for each individual record that is related to the folder or identified by profiles in the target object slot of the rule record currently being processed. Where individual records are included in multiple profiles only a single record is written to the current rule target list. In the event that the rule's target object is a profile, the queue generator 140 creates the current rule target list by searching the relational data base for all records that satisfy the profile's selection criteria. The current rule target list represents the target population for the rule.

The queue generator 140 next builds a list of current rule segments by selecting from the relational data base all segments identified by the target segment type, and target segment id. Since target segment types include folders, profiles, and individual content segments; the on-line queue manager 20 must evaluate the target segment type. If the target segment type is a folder, then the on-line queue manager 20 must select from the relational data base all individual content segment records related to the folder, and all individual content segments identified by the profiles within the folder. If the target segment type is a profile the queue generator 140 retrieves from the relational data base all content segment records that satisfy the selection criteria contained in the profile record. The resulting collection of individual content segment records is written to the current rule segment list. If a single content segment is identified several times within a target object (i.e. a content segment is included in multiple profiles in a single folder), then the content segment is written only once to the current rule segment list.

For each pair of target entity records (in the current rule target list) and segment ids (in the current rule segment list), the queue generator 140 will write a record to the appropriate queue (i.e. the subscriber queue if the target entity type for the current rule is "subscribers", the location queue if the target

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entity type is "location", or the time period queue if the target entity type is "time period"). The record may contain the following information listed in TABLE 8.

TABLE 8

target id	id for the target entity
segment id	id for the content segment
priority	the priority of the current rule
rule id	id of current rule (for audit and accounting)
segment media type	
segment use type	
next exposure	
max. frequency	
	number of minutes between exposures to the subscriber
max. repeat	

If a record already exists for the given target id and segment id combination, the queue generator 140 examines the priority. If the priority in the queue record is greater than or equal to the priority of the rule currently being processed (or the priority is 0 indicating that the individual entity should never be exposed to the segment), then the queue generator 140 does nothing. If the priority of the existing queue record is less than the priority of the rule currently being processed (or the current rule priority is 0), then the queue generator 140 updates the record with the current priority, and updates the rule id with the current rule id.

The queue generator 140 also writes a record to the queue generator processing logs 144 in the relational data base indicating the conflict between the two rules. The output of the queue generator 140 includes three queue tables in the relational data base (i.e. subscriber queues, content location queues, and time period queues), and a rule conflict table. The priority queues are loaded onto the on-line queue manager 20 platform by the system administrator, or through a scheduled routine. If the sequence capability is implemented, a table of sequence definitions is also loaded onto the on-line queue manager 20. (See column 14, line 23 through column 15, line 54 of Brown.)

Essentially, Brown discloses a fairly complex process that is controlled by rules, and utilizes parameters that include subscriber information, content location information, and time period information. Several types of queues are disclosed, including priority queues, subscriber queues, content location queues, and timer period queues. The Examiner's position is that queues inherently including a number of unfilled slots at the instant the queues are created. On that basis, any of

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Brown's priority queues, subscriber queues, content location queues, and timer period queues could be considered to be an item slot group. However Brown does not disclose *any* queue that encompasses another queue, i.e., Brown does not disclose any queues that include other queues as an element of the queue. Brown discloses an on line queue manager into which all the priority queues are loaded once they are generated, but this on line queue manager is clearly not equivalent to a meta slot item group. There does not appear to be any basis to conclude that Brown's on line queue manager meets the recited limitation of *having a number of meta item slots equal to a total number of item slots of the at least one item slot group the meta item slot group encompasses*. As discussed above, the meta item slots are not equivalent to the item slots in item slot groups encompassed by the meta item slot group, even though they are equivalent in number. Brown does not appear to disclose any logical organizational structure equivalent to the meta item slot groups and meta item slots recited in applicants' claims.

In the telephone interview noted above, the Examiner indicated his belief that the recited meta item slots groups are equivalent to related or nested queues, i.e., a queue that includes other queues as its items. However, regardless of whether such an entity could logically exist, Brown does not disclose such an entity.

Even more significantly, the claimed process of filling the recited meta item slots and item slots is simply not taught or suggested by Brown or any other cited art. As noted above, items of a first type are allocated to meta item slots, then items of a second type are allocated to item slots of specific item slot groups, and finally, the items of a first type (already allocated to meta item slots in meta item slot groups) are further allocated to item slots in specific item slot groups. To disclose an equivalent to applicants' claimed invention, Brown must teach or suggest filling queues by: producing a plurality of queues, producing a plurality of meta queues that include at least one queue, allocating a first type of items to the meta queues, allocating a second type of items to specific queues, then allocating the items of the first type in the meta queues to specific queues within each meta queue. However, Brown does not teach or suggest such a process.

While the above comments are directed primarily to Claim 8, it should be noted that Claim 13 also recites meta item slots, meta item slot groups, and allocating some items first to meta item slot groups, and then to the item slot groups. Thus, the traverse of the rejection of Claim 8, as provided above, also applies to Claim 13, which distinguishes over the cited art for the same reasons.

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The Examiner is correct in asserting that Brown teaches a method for providing advertising to locations on websites. However, the specific process claimed by applicants for filling open slots is simply not taught or suggested by Brown or any other cited art. According to Brown, items are selected to be placed into a specific queue based on an application of rules. An item is either a member of a queue, or it is not. Brown does not teach or suggest that items are first placed into a logical organizational element (meta item slot group, or meta queue), while items of a second type are allocated to specific queues, and then, that the items of the first type are allocated to remaining openings in queues within the meta queues. The recited method of filling slots in item slot groups (or queues) is therefore significantly different than the approach used by Brown for filling a queue.

Based on the telephone interview, it appears the Examiner is convinced that because Brown describes a method for placing advertising content on web-pages, and because applicants have used advertising content on web pages as an example of items that can be managed using the inventory management techniques of the present claimed invention, that applicants' invention must be anticipated by Brown. Applicants respectfully request the Examiner to reconsider his position, particularly in light of the remarks above.

Further, should the Examiner remain un-persuaded, applicants respectfully request that the Examiner place into the record a thorough explanation of his logic. As indicated above, particularly in light of the Brown reference (which describes many different sub processes required to produce the desired result), merely citing to a page or paragraph in the reference does not provide insight in the logical process employed by the Examiner in reaching his conclusions sufficient to enable applicants to properly respond.

The cited art does not teach or suggest the specific sequence of steps recited in Claim 8 to fill item slots in item slot groups, by employing meta item slot groups and meta item slots. Furthermore, none of the cited references suggests that *any* modification to the method disclosed by Brown would be desirable, much less teach or suggest the specific modifications required to achieve applicants' claimed invention as defined in Claim 8.

Claim 13 adds additional steps related to sub item slot groups, as well as including substantially all of the steps of Claim 8, which as described in detail above, clearly distinguish over the cited art. For the reasons discussed above, Brown does not anticipate or render the invention recited in Claims 8 and 13 obvious to one of ordinary skill in the art. Accordingly, the rejection of

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Claims 8 and 13 under 35 U.S.C. § 102(e) as being anticipated as by Brown (U.S. Patent No. 6,026,368) should be withdrawn.

Rejections Based on 35 U.S.C. § 103

The Examiner has rejected Claims 1-7, 9-12, and 14-17 under 35 U.S.C. § 103(a) as being unpatentable over Brown (U.S. Patent No. 6,026,368), in view of Hoyle (U.S. Patent No. 6,141,010). The Examiner indicates that Brown discloses an invention equivalent to that defined by applicants' claims, except for displaying information in a bar graph format. The Examiner relies on Holye for teaching complex graphical displays and argues that it would have been obvious to combine Hoyle's graphics with Brown's advertising method to achieve the present claimed invention. The Examiner further indicates that such a combination of Brown and Holye includes each of the elements recited in applicants' dependent claims. Applicants respectfully disagree that the invention defined by these claims is obvious in view of the cited art for the following reasons.

With respect to Claim 1, and as noted above, the Examiner has indicated that the priority queues disclosed by Brown are equivalent to the recited item slot groups, which include a number of empty item slots. Claim 1 recites that a plurality of empty item slot groups are generated. Then, items of a first type are placed into open slots in item slot groups based on characteristics of the item slot groups. Next, items of a second type are placed into open slots in item slot groups based on characteristics of the item slot groups. Finally, the item slot groups are displayed as histograms.

Applicants respectfully submit that Brown does not teach an equivalent method for filling a plurality of priority queues, and thus even if the suggested combination were made, the resulting combination would not be equivalent to the invention recited in applicants' Claim 1.

Brown teaches a method for filling the item slots in a priority queue according to specific and fairly complex rules. As applicant understands the process taught by Brown, priority queues are filled *sequentially*, rather than in parallel. Brown discloses that a priority queue will be generated when an analyst selects a specific set of rules to apply. Based on those rules, the priority queue is populated with items that correspond to the selected rules. The analyst can then use the same rules on different data to produce a different priority queue, or change the rules and use the same data to similarly produce a different priority queue. Thus, priority queues are built and filled *one at a time*, and a new priority queue is not built until the previous priority queue is filled with the desired items.

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In contrast, the present invention describes building a plurality of slot item groups initially, and then filling those slot item groups with different types of items. Thus, the plurality of slot item groups are filled in parallel, and multiple partially filled item slot groups exist simultaneously (after the first type of items have been allocated). This claimed approach is not equivalent to the process taught by Brown. There does there appear to be any suggestion in the cited art indicating that it would be desirable to modify Brown's method, so that priority queues are filled in parallel, rather than in sequence.

Applicants further submit that even if Brown disclosed an equivalent method of filling item slots in item slot groups, Hoyle does not disclose displaying inventory data relating to banner advertisements as a histogram, such that each bar corresponds to a group of possible locations for ad content (i.e., an item slot group), where a height of the bars corresponds to the number of available sites for banner ads in those locations (i.e., item slots of the item slot group), and does not disclose or suggest that the bars provide an indication as to how many of the locations for banner ads have been filled with content (number of item slots of the item slot group are filled and how many of the number of item slots of the item slot group are unfilled). Thus, the combination of cited art does not achieve applicants' claimed invention.

It appears the Examiner believes that because Hoyle discloses that information relating to banner ads can be provided as visually-perceived data, Hoyle therefore discloses *all possible graphical displays* of *any advertisement related data*. Such a conclusion is not justified, because the cited art does not merit such a broad interpretation of its teaching. While Hoyle may suggest that information related to web-based advertising can be displayed graphically, there is no basis to conclude that Holye discloses or suggests either that the *specific information* that applicants' claims recite can be graphically displayed, or that the *specific type of graphically representation* recited in the claims can be employed. Because Holye does not employ a histogram as a graphical representation of the parameters noted by applicants' claims, Hoyle cannot be said to teach or suggest a histogram like that recited in these claims. Hoyle also does not teach or suggest that the information graphically displayed should include a plurality of groups, the total number of slots in each group, and the number of slots in each group that are filled or unfilled. To establish a *prima facie* case of obviousness, the prior art reference must teach or suggest *all* elements or steps recited in the claim. The cited art simply does not teach or suggest the use of a histogram, nor the display of the specific information recited by applicants' claims.

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To achieve an equivalent to the invention claimed by applicants, Brown's method would need to be modified such that priority queues (i.e., item slot groups) are filled in parallel. The cited art provides no basis for concluding that such a modification is obvious. Hoyle's disclosed graphical displays would also need to be modified to include histograms, and those histograms would need to display both the number of empty item slots in Brown's priority queues, and the total number of item slots in Brown's priority queues. The cited art does not teach or suggest that displaying item slot groups (or priority queues) as histograms would be desirable and does not suggest that displaying the total number of item slots and number of filled item slots per item slot group would be desirable. The combination suggested by the Examiner appears impermissibly rely on hindsight, since there is no rational basis that would lead one of ordinary skill in the art to combine and modify the teaching of the cited references to achieve the present claimed invention.

It should be noted that the above discussion is directed to the patentability of independent Claim 1. Independent Claims 8 and 13 are patentable for the reasons discussed above. In the interest of simplifying this response, applicants have elected not to specifically explain why each of the dependent claims are also patentable over the prior art of record, but this decision should not be construed as an indication that the dependent claims do not recite patentable subject matter. Indeed, applicants believe that each dependent claim also recites patentable subject matter. In any case, each dependent claim is patentable for at least the same reasons as the independent claim on which it ultimately depends. Accordingly, the rejection of Claims 1-7, 9-12, and 14-17 under 35 U.S.C. § 103 as being unpatentable over Brown in view of Hoyle should be withdrawn.

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In consideration the Remarks set forth above, it is submitted that all claims in the application define a novel and non-obvious invention and are thus patentable. The Examiner is therefore requested to pass this case to issue without delay. Should any further questions remain, the Examiner is invited to telephone applicants' attorney at the number listed below.

Respectfully submitted,

Ron Anderson

Ronald M. Anderson
Registration No. 28,829

I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed envelope as first class mail with postage thereon fully prepaid addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on May 7, 2003.

Date: May 7, 2003

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MARKED-UP VERSION OF THE AMENDMENTS

Amendment to the Claims

In the Claims:

Please amend Claims 8, 9, 10, 13, 14, and 15 as follows:

8. (Amended) A computer-implemented method comprising:

constructing a plurality of item slot groups, each <u>item slot</u> group having a number of item slots, each item slot initially unfilled and able to be filled by an item;

constructing a plurality of meta item slot groups, each meta <u>item slot</u> group encompassing at least one item slot group and having a number of <u>meta</u> item slots equal to a total number of item slots of the at least one item slot group the meta <u>item slot</u> group encompasses, each <u>meta</u> item slot initially unfilled and able to be filled by an item;

allocating each of a plurality of items of a first type over the <u>meta</u> item slots of the meta item slot groups that are unfilled by matching characteristics of the <u>first type of</u> item<u>s</u> to characteristics of the meta item slot groups, such that allocating an item to a[n] <u>meta</u> item slot fills the <u>meta</u> item slot with the item;

allocating each of a plurality of items of a second type over both the <u>meta</u> item slots of the meta item slot groups that are unfilled and the item slots of the item slot groups that are unfilled by matching characteristics of the <u>second type of</u> items to <u>the respective</u> characteristics of the item slot groups <u>and the meta item slot groups</u>, such that allocating an item to an item slot fills the item slot with the item<u>, and allocating an item to a meta item slot fills the meta item slot with the item</u>; and,

<u>for each meta item slot group</u>, allocating each of the plurality of items of the first type <u>that have been allocated to a meta item slot</u> over the item slots of the <u>at least one</u> item slot group[s] <u>encompassed by that meta item slot group</u> that are unfilled, <u>by matching characteristics of the first type of items to characteristics of the at least one item slot group encompassed by that meta item slot group</u>, such that allocating an item to an item slot fills the item slot with the item.

9. (Amended) The method of claim 8, further comprising:

displaying the plurality of item slot groups as a first histogram having a plurality of bars, where each bar corresponds to an item slot group and has a height corresponding to the number of item slots of the item slot group, wherein the bar has <u>an</u> indication as to how many of the number

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of item slots <u>of the item slot group</u> are filled and how many of the number of item slots <u>of the item slot group</u> are unfilled; and,

displaying the plurality of meta item slot groups as a second histogram having a plurality of bars, where each bar corresponds to a meta item slot group and has a height corresponding to the number of <u>meta</u> item slots of the meta item slot group, wherein the bar has <u>an</u> indication as to how many of the number of <u>meta</u> item slots <u>of the meta item slot group</u> are filled and how many of the number of <u>meta</u> item slots <u>of the meta item slot group</u> are unfilled.

10. (Amended) The method of claim 8, wherein each item comprises an ad, each item slot group comprises a web site, and each meta item slot group comprises at least one web site having similar characteristics, such that each item slot of the item slot group corresponds to an advertising space on the web site on which an ad can be shown, and each <u>meta</u> item slot of the meta item slot group corresponds to an advertising space on a web site of the meta item slot group on which an ad can be shown.

13. (Amended) A computer-implemented method comprising:

constructing a plurality of sub item slot groups, each sub group having a number of item slots, each item slot initially unfilled and able to be filled by an item;

constructing a plurality of item slot groups, each group encompassing at least one sub item slot group and having a number of item slots equal to a total number of item slots of the at least one sub item slot group the group encompasses, each item slot initially unfilled and able to be filled by an item;

constructing a plurality of meta item slot groups, each meta group encompassing at least one item slot group and having a number of <u>meta</u> item slots equal to a total number of item slots of the at least one item slot group the meta group encompasses, each item slot initially unfilled and able to be filled by an item;

allocating a plurality of items of a first type over the <u>meta</u> item slots of the meta item slot groups that are unfilled by matching characteristics of the <u>first type of</u> item<u>s</u> to characteristics of the meta item slot groups, such that allocating an item to a[n] <u>meta</u> item slot fills the <u>meta</u> item slot with the item;

allocating each of a plurality of items of a second type over the <u>meta</u> item slots of the meta item slot groups that are unfilled, the item slots of the item slot groups that are unfilled, and the

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item slots of the sub item slot groups that are unfilled, by matching characteristics of the second type of items to respective characteristics of the meta item slot groups, of the item slot groups, and of the sub item slot groups, such that allocating an item to an item slot fills the item slot with the item, and allocating an item to a meta item slot fills the meta item slot with the item; and,

for each meta item slot group, allocating each of the plurality of items of the first type that have been allocated to a meta item slot in that meta item slot group over the item slots of the at least one item slot group[s] encompassed by that meta item slot group that are unfilled and the item slots of the sub item slot groups encompassed by that meta item slot group that are unfilled, by matching characteristics of the first type of items to respective characteristics of the item slot groups and the sub item slot groups encompassed by that meta item slot group, such that allocating an item to an item slot fills the item slot with the item.

14. (Amended) The method of claim 13, further comprising the steps of:

displaying the plurality of item slot groups as a first histogram having a plurality of sub-bars organized into a plurality of bars, where each sub-bar corresponds to a sub item slot group and has a height corresponding to the number of item slots of the sub item slot group, wherein the sub-bar has an indication as to how many of the number of item slots of the sub item slot group are filled and how many of the number of item slots of the sub item slot group are unfilled; and,

displaying the plurality of meta item slot groups as a second histogram having a plurality of bars, where each bar corresponds to a meta item slot group and has a height corresponding to the number of meta item slots of the meta item slot group, wherein the bar has an indication as to how many of the number of meta item slots of the meta item slot group are filled and how many of the number of meta item slots of the meta item slot group are unfilled.

15. (Amended) The method of claim 13, wherein each item comprises an ad, each item slot group comprises a web site, each sub item slot group comprises a viewer type of web site, and each meta item slot group comprises at least one web site having similar characteristics, such that each item slot of the sub item slot group corresponds to an advertising space on the web site on which an ad can be shown to a particular viewer type, each item slot of the item slot group corresponds to an advertising space on the web site on which an ad can be shown, and each meta item slot of the meta item slot group corresponds to an advertising space on a web site of the meta item slot group on which an ad can be shown.

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